**MEMORANDUM**

**DATE:** May 27, 1993

**TO:** Division of Shellfish Sanitation Staff

**FROM:** Robert E. Croonenberghs, Ph.D., Director
Division of Shellfish Sanitation

**THROUGH:** Eric H. Bartsch, P.E., Director
Office of Water Programs

**SUBJECT:** Shellfish and Crustacea Plants - Procedure - Use of RODAC Plates

PURPOSE

To provide a uniform methodology for use in situations where it would be helpful to evaluate sanitary conditions, sanitizer effectiveness and efficiency of application in relation to food and nonfood contact surfaces. This methodology can be used in both shellfish and crustacea plants and is described here as a "tool" the shellfish specialist can use if desired.

PROCEDURE

When evaluating the sanitary conditions of a shellfish or crustacea plant, it is necessary to carefully consider the sanitary conditions of food and nonfood contact surfaces during operation and after sanitizing. In this evaluation you may find it useful to go beyond the normal visual means. As the field of environmental health has developed, we have seen an epidemiological shift from fecal-oral diseases to include diseases caused by emerging opportunistic pathogens. These organisms are ubiquitous and thus are much harder to control. With this in mind, the shellfish specialist needs to be able to effectively evaluate conditions in shellfish and crustacea processing facilities which may lead to these products becoming contaminated by such organisms.

The standard shellfish or crustacea plant inspection, which relies on observation and final product sampling, does not assure asepsis of the critical areas within these facilities. The RODAC plate method is used for establishing, revising, or monitoring cleaning programs and for detecting and counting microbial populations. This technique will help determine:

1. If all areas are being cleaned properly.
2. If equipment and supplies are being maintained properly.
3. If proper sanitizing solutions are being used, and if they are being changed often enough.
4. If personnel are following the program as directed.
5. If the incidence of certain organisms is on the increase.
6. If the program needs to be modified.

The following procedure points out how RODAC plates can be utilized in this analysis and will outline the procedures to use:

1. If the shellfish specialist decides that they need to utilize RODAC plates as part of their inspection they shall make arrangements for the laboratory personnel to prepare the number of plates they desire well in advance of the time of inspection.

2. The laboratory staff will select and prepare the medium by using either dehydrated Tryticase Soy Agar with Lecithin and Polysorbate 80 or Standard Methods Agar with Lecithin and Polysorbate 80. Dispense 16.5 to 17.5 ml of the selected medium at or about 48 to 50□C into each plate on a level surface. Extreme care should be taken to prevent the formation of air bubbles and to keep the medium from overflowing. If either occurs, the plates should be discarded. The plates are then allowed to solidify.

3. The shellfish specialist will transport these plates tightly wrapped in plastic, heavy paper, or aluminum foil at ambient air temperature (zip lock bags are the most convenient method). They should be consecutively numbered with a xylene based felt tip marker, wax pencil or label.

4. On the report form the location of the site to be evaluated should be noted. Remove the lid and hold it downward to avoid
accidental contamination. Apply the plate's agar directly to the surface being tested and exert moderate vertical pressure. Replace the cover and place in a dry container within the sample cooler. Repeat with additional plates as deemed necessary. Caution should be exercised to avoid rubbing the site, otherwise the agar bed may be broken and the usefulness of the plate affected.

5. The plates shall be brought back to the field office, placed in the 35□C incubator for 48 hours, removed from the incubator at the end of 48 hours and all the colonies on the surface of the plate counted. The grid on the bottom will serve as a guide for counting the number of colonies per square inch.

6. The numbers of colonies on the plates will provide an indication of the sanitary condition of the surface tested. Guidelines for evaluation are as follows:

a. The Committee on Microbial Contamination of Surfaces of the Laboratory Section of the APHA considers that an average count of about 10 per RODAC Plate is an achievable level of cleanliness and believes that the guidelines presented below represent realistic microbial objectives immediately after cleaning and sanitizing.

| Colonies per RODAC Plate | | |
|---|---|---|
| Good | Fair | Poor |
| 0-25 | 26-50 | 50 and over |

b. Concentrations of bacteria on critical nonfood contact surfaces such as scrap cans, hand trucks, etc. and all food contact surfaces during operation should be less than 25 per square inch.